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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,071	04/08/2002	Georg Schneider	WI.1706PCT-US	6951
7590	10/03/2003		EXAMINER HINZE, LEO T	
Douglas R Hanscom Jones Tullar & Cooper P O Box 2266 Eads Station Arlington, VA 22202			ART UNIT 2854	PAPER NUMBER

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,071

Applicant(s)

SCHNEIDER ET AL.

Examiner

Leo T. Hinze

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-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 15-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 15-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17-48 of copending Application No. 10/089,070. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to a cylinder of a rotary printing press comprising

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a cylinder base body, a cylinder outer body, and tempering flow chambers between said cylinder base body and said cylinder outer body.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 15-16, 25, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Hold, US 2,875,985.

Regarding claim 15, Hold teaches a cylinder of a rotary printing press comprising: a cylinder base body (14) having a cylinder base body outer circumference; a cylinder outer body (10) supported on, and spaced from said cylinder base body. said cylinder outer body having an inner surface and an outer shell surface; a multiplex-threaded spiral shaped conduit (19) on said cylinder base body outer circumference; and a plurality of spiral-shaped flow paths, through which tempering medium can flow, said plurality of spiral-shaped flow paths being defined by said multiplex-threaded spiral shaped conduit on said cylinder base body circumference and said inner

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surface of said cylinder outer body, said outer shell surface of said cylinder outer body conducting printing ink (Figs. 1, 2, and 3).

Regarding claim 16, Hold also teaches strips (25) on said cylinder base body circumference, said strips defining said multiplex-threaded spiral shaped conduit and supporting said cylinder outer body on said cylinder base body (Figs. 2 and 3).

Regarding claim 25, Hold also teaches a supply line and a removal line (15) (col. 2, lines 51-52 and 65) for said tempering medium.

Regarding claim 27, Hold also teaches at least one journal (11) for supporting said cylinder, said supply line and said removal line being coaxially arranged in said journal.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made

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in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 17-20 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hold.

Hold teaches increasing turbulence of fluid flow increases the rate of heat transfer in accordance with hydrodynamic principles (col. 3, lines 14-16).

Hold does not teach:

- wherein said conduit is octuply-threaded (claim 17);
- wherein said conduit has a first cross-sectional area and further wherein said cylinder outer body shell surface has a second cross-sectional area and wherein a ratio of said first and second cross-sectional areas is in the range of 1:1200 to 1:1600 (claim 18);
- wherein said strip has a first width and further wherein said cylinder outer body has a wall thickness, and wherein a ratio of said first width to said wall thickness is less than or equal to 2 (claim 19);
- wherein said ratio of said first width to said wall thickness is less than or equal to 1.5 (claim 20);
- wherein said cylinder outer body has a wall thickness and an axial length and further wherein a ratio of said wall thickness to said axial length is in a range of 1:200 to 1:1200.
- wherein said range is between 1:400 and 1:1000 (claim 34).

One having ordinary skill in the art of printing machines and heat transfer would recognize that there are many variables involved in designing a heat transfer cylinder, including but not

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limited to temperature of the working fluid, desired temperature of the roll surface, flowrate and pressure of the working fluid, the heat load from external sources, and the heat transfer coefficient. Further, one having ordinary skill in the art would recognize that the heat transfer coefficient itself depends on many variables, including but not limited to Reynolds number of the working fluid, heat transfer properties of the materials, dimensions of the components, surface area available for cooling, and surface area being cooled.

Regarding claim 17, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hold to use an octuply-threaded conduit, because one having ordinary skill in the art would recognize that, all other variables being the same, and octuply-threaded conduit would provide twice the cooling power of the quadruply-threaded conduit of Hold.

Regarding claims 18-20 and 33-34, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hold to have the various ratios as claimed, as one having ordinary skill in the art would easily obtain the optimum ratios through routine experimentation, because one having ordinary skill in the art would recognize that with all other variables being held constant, one could then vary the selected ratios to obtain the optimum heat transfer coefficient.

8. Claims 21-24, 26, 28, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rau et al., US 5,595,115.

Rau teaches:

- a cylinder (43) of a rotary printing press (10) comprising: a cylinder base body (51)

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having a cylinder base body outer circumference; a cylinder outer body (50) spaced from said cylinder base body and having an inner surface and a outer shell surface; and an axially extending gap (53) defined by said spaced cylinder base body outer circumference and said cylinder outer body inner surface and through which a tempering medium can flow, said gap having a generally annular profile, said gap having a cross-section area, said shell surface having a shell surface area (Fig. 3) (claim 21);

- wherein said cylinder base body and said cylinder outer body are unsupported by each other (Fig. 3) (claim 22);
- a supply line (52, 65) and a removal line (57, 66) for said tempering medium (claim 26);
- at least one journal (45) for supporting said cylinder, said supply line and said removal line being coaxially arranged in said journal (Fig. 3) (claim 28);
- wherein said cylinder is an inking roller (7) (col. 2, lines 6-9)(claim 30);
- wherein said cylinder is an screen roller (75) (claim 32).

Rau does not teach:

- a ratio of said gap cross-section area to said shell surface area being between 1:200 and 1:600 (claim 21);
- wherein said ratio is between 1:300 and 1:500 (claim 23).

One having ordinary skill in the art of printing machines and heat transfer would recognize that there are many variables involved in designing a heat transfer cylinder, including but not limited to temperature of the working fluid, desired temperature of the roll surface, flowrate and

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pressure of the working fluid, the heat load from external sources, and the heat transfer coefficient. Further, one having ordinary skill in the art would recognize that the heat transfer coefficient itself depends on many variables, including but not limited to Reynolds number of the working fluid, heat transfer properties of the materials, dimensions of the working surfaces, surface area available for cooling, and surface area being cooled.

Regarding claims 21 and 23, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rau to have the various ratios between components as claimed, as one having ordinary skill in the art would easily obtain the optimum ratios between component sizes through routine experimentation, because one having ordinary skill in the art would recognize that with all other variables being held constant, one could then vary the ratio between specific component sizes to obtain the optimum heat transfer coefficient.

Regarding claims 22, 24, 26, 28, 30, and 32, the modification of Rau teaches all that is claimed as discussed above.

9. Claims 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hold in view of Rau et al.

Hold teaches all that is claimed as discussed in the above rejection of claim 15, except:

- wherein said cylinder is an inking roller (claim 29);
- wherein said cylinder is an screen roller (claim 31);

Rau teaches that it is advantageous to provide internal cooling for at least one of the ink distributing rollers (col. 2, lines 6-9) and screen rollers (col. 5, lines 48) to prevent the build-up of printing ink on the rubber blanket.

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Regarding claims 29 and 31, it would have been obvious to one having ordinary skill in the art to use Hold in printing machines, specifically inking rolls and screen rolls, because Rau teaches that internal cooling of such rolls is advantageous for preventing the build-up of printing ink on the rubber blanket.

Response to Arguments

10. Applicant's arguments, see pages 9-11, filed 17 July, 2003, with respect to the rejection(s) of claim(s) 15-20, 25, 27, 29, 31, 33, and 34 under 35 USC § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly cited prior art reference.

11. The examiner disagrees with applicant, regarding applicant's arguments on page 11 that "a person of skill in the art of printing presses would not be apt to look to the field of heat transfer tubes to find any usable teachings." One having ordinary skill would recognize that the applicant's claimed invention is a heat transfer tube, and recognizing such, would investigate the large body of prior art relating to heat transfer. The applicant's intended use of the heat transfer tube in a printing machine does not invalidate the applicability of prior art teachings of heat transfer tubes to the applicant's invention.

12. Applicant's arguments with regard to the rejection of claims 21-24, 26, 28, 30, and 32 under 35 USC § 103(a) have been fully considered but they are not persuasive.

While Rau '115 may appear to show a substantially larger gap cross section area so the ratio of 1:5 or 1:10 would be more appropriate, the examiner is not relying on the relative size of components in the figures.

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The examiner disagrees with the applicant's assertion on page 12 that "these ratios are not a mere matter of optimum dimensions that could be easily determined", because in the complicated field of heat transfer, the effort required to "easily determine" may seem greater than the effort required in other fields, but is routine for the field of heat transfer. One having ordinary skill in the art of printing machines and heat transfer tubes would recognize that there are many variables involved in designing a heat transfer tube, including but not limited to temperature of the working fluid, desired temperature of the roll surface, flowrate and pressure of the working fluid, the heat load from external sources, and the heat transfer coefficient. Further, one having ordinary skill in the art would recognize that the heat transfer coefficient itself depends on many variables, including but not limited to Reynolds number of the working fluid, heat transfer properties of the materials, dimensions of the working surfaces, surface area available for cooling, and surface area being cooled. Recognizing that there are many variables involved in successfully designing a heat transfer tube for use in a printing machine, it is reasonable to expect that one having ordinary skill in the art could set all other variables constant, and focus exclusively on optimizing the heat transfer coefficient of the heat transfer tube by optimizing selected ratios of dimensions of components or ratios of relationships between components.

Response to Amendment

Applicant should note that when using the new format for amendments, all the claims must be included, including the canceled claims. See 37 C.F.R. § 1.121.

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Conclusion

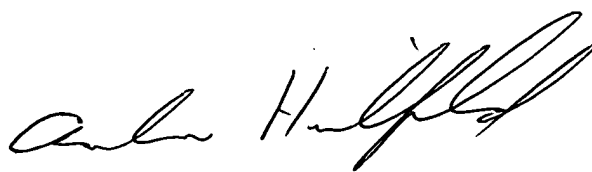
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Appel, US 4,252,184, and Beghin, US 4,090,553 each teach heat transfer tubes having obvious similarities to the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leo T. Hinze whose telephone number is (703) 305-3339. The examiner can normally be reached on M-F 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (703) 305-6619. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0952.

Leo T. Hinze
Patent Examiner
AU 2854
19 September, 2003


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